PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Attorney Docket No. 295620-214271; P03040US2A

APPLICANT(S)	:	Lanzarotta
TITLE	:	Non-Staining Black Sidewall
APPLICATION NO.	:	10/567,986
FILED	:	July 5, 2007
EXAMINER	:	William Cheung
ART UNIT	:	1796

DECLARATION OF JOSEPH M. LANZAROTTA UNDER 37 C.F.R. § 1.132

I, Joseph Lanzarotta, of 3865 Wisewood St. N.W., Uniontown Ohio 44685, do hereby declare as follows:

1. I am one of the named inventors of the currently pending claims of U.S. Application Serial No. 10/567,986 and am currently employed by Bridgestone Americas Tire Operations, Materials Division, an affiliate of the assignee of the application.

2. I have a degree in Chemistry, and I have worked full-time as a research scientist in the field of polymers for over 30 years.

3. Those of ordinary skill in the art would not classify EPDM (ethylene propylene diene monomer rubber) as a thermoplastic rubber. Instead, EPDM would be classified as a thermoset polymer.

4. EPDM is a thermoset species rather than a thermoplastic species. Thermoset polymers cannot be reheated and recycled once they are cured. In contrast, thermoplastic polymers can be reheated and recycled even after curing.

5. The attached Exhibits further support these statements.

6. I declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of this application or any patent issuing thereon.

Joseph M. Lanzarotta — Date 4/13/10

Compound Development Specialist

Exhibit A

maintenance SOLUTIONS

Making a Match, System by System

Part 1: Roof Coatings: Options Abound For Metal Roofs
Part 2: SPF Roofing Systems Provide Extra Insulation
Part 3: Thermoset Versus Thermoplastic Membranes: What's the Difference?
Part 4: Modified Bitumen And BUR Systems: Roof Coating Strategies

Provided by the Roof Coatings Manufacturers Association

Thermoset Versus Thermoplastic Membranes: What's The Difference?

By Reed Hitchcock
July 2008

Single-ply roofing membranes fall into two classes — thermoset membranes, such as ethylene propylene diene monomer (EPDM) and Hypalon, and thermoplastic membranes, such as thermoplastic polyolefin (TPO) and polyvinyl chloride (PVC).

TPO and PVC are smooth, chemically resistant and water-resistant, and neither is easy to coat. For PVC membranes, high levels of liquid plasticizer seem to present a bigger challenge than their slick surfaces. The chemical resistance of these polymers also inhibits the development of suitable primers, and these systems do require special primers for coating. This is not a common application and is an area of ongoing research.

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Managers should note that TPO and PVC membranes are easy to misidentify in the field. Because they require different primers and coatings, examining a test patch is a prudent precaution before coating an unidentified white membrane.

EPDM systems use carbon black to block UV radiation and are made from an inert material similar to tire rubber. Attempts to factory-coat EPDM have not succeeded, but managers have much to gain from coating an EPDM roof system with a white coating.

Hypalon is a chlorosulfonated polyethylene. When Hypalon is 15-20 years old, managers should have it coated directly to extend its useful service life. Applicators can use a white coating, provided the surface is prepared properly with a manufacturer-approved primer. Most manufacturers use a wash-primer.

Comments

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Making a Match, System by System

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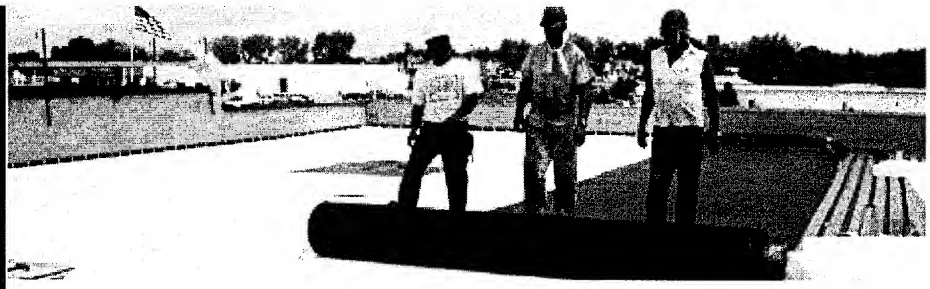
Exhibit B

Tilsen Roofing Company



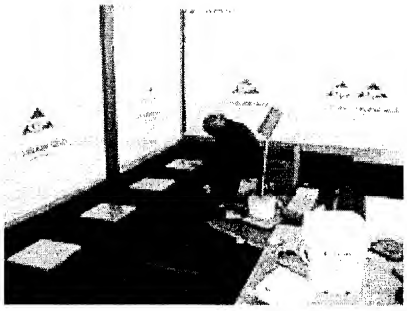
Tilsen Commercial Roofing Services

Single - Ply Roofing:

Tilsen Roofing installs both Thermoset (EPDM) and Thermoplastic (PVC and TPO) in varying thickness and attachment methods.

- Roof Design & Consultation
- Installations
- Repairs | Emergencies
- Maintenance | PRIME
- Built-up Roof Systems
- Modified Bitumen Roof Systems
- Single Ply Roof Systems
- Waterproofing Systems
- Coating Systems
- Architectural Sheet Metal

Facilities where Tilsen Roofing Company has installed single-ply roof system include: Electronic Theatre Controls, Princeton Club West, Burlington Coat Factory at Westland Plaza, and Tanger Outlet Mall.



John Nolen Drive Bldg - Madison, WI

If you would like to get in touch with Tilsen Roofing, you can either contact us by telephone - 608 256 2388 - e-mail us or submit an online estimate/quote

Exhibit C

Advantages in extrusion: thermoset vs. thermoplastic.

Title Annotation: *Tech Service*
Author: *Hargest, Scott*
Date: *May 1, 2004*
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In the complex world of the rubber industry, processors can choose from a wide variety of polymers, and deciding which material is most appropriate for a specific application can be overwhelming. To simplify the decision, elastomeric materials can be classified into one of two broad families--thermoset rubber and thermoplastic rubber. Each family has distinct processing and application advantages, as well as some disadvantages, or at least potential shortcomings.

When deciding which family of materials to use, keep the following factors in mind:

* End use application;

* required physical properties;

* raw material costs; and

* processing and packaging costs.

You will also want to consider the relative availability of various elastomers; your existing processing, testing and manufacturing equipment: raw material storage requirements; and material mixing and processing experience.

In an industry more than 160 years old, numerous products have been developed since Charles Goodyear first discovered vulcanization. Considering and evaluating the issues described above will help you determine which family of materials--the thermosets or the thermoplastics--will best suit your needs.

Advantages of thermoset rubber

On a molecular scale, a thermoset rubber compound is best described as chemically connected "spaghetti strands." Fillers and additives such as carbon black or plasticizers impart unique properties to the compound, such as UV protection, a smooth surface or flame retardancy. Manufacturing a thermoset rubber part usually involves three basic steps:

* Mixing the raw rubber, various fillers, oils and cure chemicals in an internal mixer or on a mill to form the compound;

* shaping the compound into the finished part via molding or extrusion; and

* curing or vulcanizing the finished part and allowing it to cool.

Processors have used a wide variety of both natural and synthetic thermoset rubber, including EPDM, SBR, NBR and polychloroprene in industrial, automotive and commercial applications for ninny years. Thermoset rubber can be used in both injection molding and extrusion processes. Thermoset rubber offers several distinct advantages over its elastomeric counterparts. Because thermoset rubber is more widely used and accepted in the industry, processors tend to have more experience with these materials. Thermoset rubber offers an increased range of physical properties such as hardness, heat resistance and compression set. As a result, these materials can be used in more applications. In addition, no pretreatment o, drying is needed prior to processing.

Advantages of thermoplastic rubber

On the other hand is thermoplastic rubber, which behaves like a rubber material but can be processed on conventional plastic processing equipment.

Thermoplastic rubber is generally a blend between a conventional cured or uncured thermoset rubber such as EPDM and a hard thermoplastic such as polypropylene or polystyrene. Thermoplastic rubber can be classified into three basic groups:

* Styrenic block copolymers (SBS, SEBS, SIS);

* thermoplastic/thermoset rubber blends (TPV, TPO, PVC/nitrile)--the thermoset rubber phase may be fully cured, partially cured or simply mechanically blended; and

* multi-block copolymers, including mechanical blends (polyurethane/rubber blends, nylon/rubber blends, polyester/rubber blends).

Thermoplastic rubber offers unique advantages compared with its thermoset counterparts. Thermoplastic rubber does not need to be compounded or mixed prior to use. In addition, only part or profile cooling is required instead of vulcanization. Because of the continuous manufacturing process, the consistency of the material is improved.

Thermoplastic rubber has a lower specific gravity than most thermoset rubber, yielding more parts per pound. Thermoplastic rubber can be recycled, yet still retain its original properties. By comparison, recycled thermoset rubber can only be used as ground filler in mechanical blends.

As with thermoset rubber, thermoplastic rubber can be processed into finished parts via extrusion and injection molding. Thermoplastic rubber has an additional advantage because it can be blow-molded and thermoformed.

Both families of rubber offer unique features, properties and advantages. Each has its respective applications and places in the marketplace. Choosing the most appropriate product for a particular application requires careful consideration of the performance needs for the end-use, required physical properties, available processing equipment and, last but certainly not least, cost.

Real-world application: Profile extrusion
Processing and equipment differences

Thermoset rubber	Thermoplastic rubber
Wide variety of applications	More limited applications but has a lower specific

	gravity
No pretreatment or drying before processing	Predrying required to prevent porosity or blisters
Extrude with general purpose screw	Extrude with high shear screw
After extrusion, vulcanize and cool part before packaging	After extrusion, cool part before packaging
Limited recycling potential	Recycled material retains original properties

Scott Hargest is an extrusion specialist with PolyOne's Elastomers and Performance Additives Group.